

REMARKS

The applicants appreciate the Examiner's careful examination of this case. Reconsideration and re-examination are respectfully requested in view of the instant remarks.

The Examiner states in paragraph 1 of the Office Action that the separate projection system disclosed in the citations is used to show that the inset image comes from a different source as described in the Applicants claim 1 as follows:

"a low resolution wide field of view image component from a first source and a high resolution narrow field of view image component from a second source which is different from the first source".

We respectfully submit that the Examiner is perhaps not fully appreciating the Applicants' invention. More specifically, in paragraphs 2 – 4 of the Office Action, the Examiner says that claims 6 – 7 and 9 – 11 are unpatentable over Lechner et al U.S. Patent No. 5,487,665 in view of Skolmoski U.S. Patent No. 6,574,352 and further in view of Harrington et al U.S. Patent No. 5,737,455. It appears from paragraph 4 of the Office Action that the Examiner has an interpretation of "source" which differs from the interpretation used in the application. A single "source" as used in the application refers to a single channel of image generator video data. The Examiner understands a "source" to be a projector. In the present application, an image generator is used to provide the video information. A "source" in this case is not a projector but is a discrete channel of video data supplied by the image generator. These discrete channels of

video data supply the video data which is displayed by the projectors as disclosed in the present application.

Lechner et al discloses an invention in which the image from a first projector has a region of the image produced by this first projector removed, or blanked, so that no video data is shown in this removed or blanked region, (see US5487665 – Lechner et al, col. 1 - lines 49-57), and into this blanked region is projected a high resolution image from a second projector.

Therefore the apparatus disclosed by Lechner et al includes a first projector which is able to display a low resolution image which displays an image which includes a blanked region, and within this blanked region a high resolution image from a second projector is displayed by a second projector. The location of the high resolution image is determined by the position of the blanked region of the low resolution image and must always be within the total area covered by the low resolution projector. High resolution images are only shown by the second projector and are only shown in the small area of the display which the second projector covers, and can therefore only be shown in a small area of the display at any time.

This does not disclose the method claimed in the present application. Claim 6 of the present application states:

"A method of operating image display apparatus, which method comprises combining in a common pixel format a low resolution wide field of view image component from a first source, and a high resolution narrow field of view image component from a second

source which is different from the first source, and in which the common pixel format is the pixel format of a high resolution image which forms the second source and from which the high resolution narrow field of view image component is obtained, whereby the high resolution narrow field of view component is able to be positioned anywhere in a display obtained from the image display apparatus."

The image display apparatus to which this method of operation is applicable typically comprises one or more projectors which are aligned, either with butted joints or overlapping joints, (see Figure 1, and its description) to provide a wide field of view display to the user. The one or more projectors are able to display image information over the full field of view at a known resolution, this resolution being determined by the specification of the one or more projectors.

The image information which is displayed over the full field of view is supplied to the one or more projectors from a first source, which first source is a first channel of a computer graphics image generator. This first source supplies image information to the one or more projectors which is at a resolution which is less than the maximum possible resolution at which the projectors can display information, this maximum resolution being determined by the specification of the projectors. The image display apparatus therefore displays the low resolution images from the first source at a pixel resolution which is higher than the resolution at which the information is supplied. The second source, which is different from the first source, is a second channel of a computer graphics image

generator. The second source supplies image information which is at a resolution which is higher than the image information supplied by the first source. The resolution of the image information supplied by the second source may be less than or equal to the maximum resolution at which the one or more projectors which comprise the image display apparatus may display the images. This second source is a component of the complete image and is combined with the component supplied by the first source. Essentially, a portion of the low resolution image supplied by the first source is replaced by the component of the image supplied by the second source. The position within the full field of view at which the component from the second source is located may be anywhere within the image display apparatus, that is anywhere in the display where an image from the one or more projectors is displayed. As this high resolution image component is combined with the low resolution image components electronically before the image information is sent to the projectors, it is possible to locate the area containing the high resolution image information at any point within the display. In order to do this, the low resolution image component from the first image source is combined with the high resolution image component from the second source in a pixel format which is the pixel format of the high resolution source.

Essentially the method of the present application uses image display apparatus which is capable of showing high resolution images over the full field of view. However the first source, which provides a component of the full field of view, which may for example be the background, provides image information at a resolution which is less than the resolution at which images may be displayed, but is nevertheless displayed at the resolution at which the image display apparatus is capable of displaying images, and the second source provides image information

which is displayed at a location within the field of view at the same resolution at which the image display apparatus is capable of displaying information.

Utilising the method of the present application can therefore provide display apparatus having a uniform high resolution capability, in which low resolution wide field of view images and high resolution narrow field of view images are able to be electronically processed into a common high resolution pixel format. This combination of low resolution images and high resolution images must be achieved electronically before the image data is supplied to the projectors (see Figure 2 and its description).

The low resolution image information from the first image source is combined with the high resolution image information from the second image source prior to being displayed by the one or more projectors of the image display apparatus.

The apparatus disclosed by Lechner et al combines the low and high resolution images optically, that is the low resolution images are supplied by a first projector and the high resolution images are supplied by a second projector. This also means that high resolution images can only be displayed at locations in the display at which the high resolution projector is able to be positioned.

Paragraph 4 of the Office Action states:

"Although Lechner et al. does not specifically teach that the low resolution image is a wide field of view image and the high resolution image is a narrow field of view, this is disclosed in Skolmoski in column 1 lines 15 - 20."

Skolmoski does disclose this but again, as in Lechner et al, the method used is an optical method which uses the projector to direct the location of the high resolution image to the location at which it is desired within the display.

The Examiner continues to state in the Office Action:

"It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine images in a high resolution format as in Harrington et al with the system of Lechner et al because this would reduce aliasing (column 3, lines 7 - 15)"

As described above, Lechner et al discloses a display in which the low resolution background image is displayed by a first projector and the inset high resolution image is displayed by a second projector. The first projector displays images at a first resolution which is different from the resolution at which the second projector displays images. The first projector is independent of the second projector. The images from each of the projectors are combined optically. It is not possible to combine images in a common pixel format when the images are combined optically. The combination of images in a common pixel format is done electronically and is performed on the image data, not on the actual image.

Therefore it is not obvious to one of ordinary skill in the art to combine the teaching of Harrington et al with Lechner et al.

It will be appreciated from the above submissions that Lechner et al does not show the Applicant's method as claimed in claim 6. Thus the combination of

Lechner et al with Skolmoski and Harrington et al does not lead towards the Applicant's invention as claimed in claim 6. Still further, it would not be obvious to one of ordinary skill in the art to combine the teachings of Harrington et al with Lechner et al.

Insofar as the Examiner is also objecting to the Applicant's claims 7 and 9 - 11 as set out in paragraphs 3 - 8 of the Office Action, the Applicants rely for patentability of these claims on the fact that these claims include all of the features of claim 6, and claim 6 is believed to be allowable for the above stated reasons.

In paragraphs 9 and 10 of the Office Action, the Applicants note firstly that claim 8 includes all of the features of the Applicant's claim 6, and claim 6 is believed to be allowable for the above stated reasons. In addition, the Applicants note that in order to reject claim 8, the Examiner needs to combine together no less than four patents, namely Lechner et al, Skolmoski, Harrington et al and Kishimoto, JP 10164468A. It is respectfully submitted that the very fact that the Examiner needs to combine together no less than four prior patents is a strong indication of the fact that claim 8 is inventive in its own right.

Accordingly, it is respectfully submitted that this application is in condition for allowance. Early and favorable action is respectfully requested.

If for any reason this RESPONSE is found to be INCOMPLETE, or if at any time it appears that a TELEPHONE CONFERENCE with Counsel would help advance prosecution, please telephone the undersigned or one of his associates, collect in Waltham, Massachusetts, at (781) 890-5878.

Respectfully submitted,


THOMAS E. THOMPSON, JR.
REG. NO. 47,136